

MEASURING SUSTAINABILITY IN A MASS TOURIST DESTINATION: PRESSURES, PERCEPTIONS AND POLICY RESPONSES IN TORREVIEJA, SPAIN

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ABSTRACT

The debate on sustainable tourism development usually focuses on small-scale tourism practices, such as rural tourism or ecotourism, inappropriately referred to as “alternative” tourism judging by the problems they start to create. Mature destinations in the Mediterranean are a classic example of inappropriate environmental practices and of disregard for the principles of sustainability, which had been present in scientific discourse long before the 1992 Rio Summit. However, the restructuring processes in traditional destinations lead to a more complex reality in which sustainability has become an inescapable reference, both as a competitiveness factor and as a growing social demand.

This paper uses an operative definition of sustainable tourism development that makes possible the effective application of its principles. From this basis, a system of sustainability indicators is developed that can be applied to Torrevieja, a Spanish Mediterranean destination that is notable for the size of its tourism industry and for its supply of holiday homes. The territorial and socio-economic transformations that have resulted from Torrevieja’s tourism development, along with the new local policies in response to these transformations, highlight both the contradictions and the chances of reconciling economic growth with sustainable development.

KEY WORDS

Sustainable tourism, indicators, mass tourism, restructuring, coastal resorts, local tourism policies

1. INTRODUCTION

The development of tourist activities along Spain's coastline, which began during the 1960s, has gradually led to extensive areas of land being devoted entirely to mass tourism, in response to international demand (mostly Northern European) for "sun-and-sea" holidays. Hotels are used for lodging visitors in a "package-deal" system, organized mainly by large scale tour operators who control international demand. Meanwhile, there has been a progressive increase in local demand for holiday lodging, and this is now giving way to the development of enormous "holiday cities" based on the construction of large housing complexes of villas and blocks of apartments. This relatively recent development has strengthened the real estate side of tourism, which is a lesser-known dimension of the great conglomeration of tourist hotels along the coast, but it is one which must be considered in relation to the desired sustainable development of the sector (Vera y Marchena, 1995; p. 28). This development pattern involves huge extensions of land which has far-reaching ecological and socio-economic implications and is affecting almost the entire Spanish Mediterranean coast (Montanari and Williams, 1995).

The pattern of tourism development in Torrevieja analysed in the paper has a number of characteristics of wider interest as a topic of research. Its essential features are quite typical of the Mediterranean coast, and it is an excellent example of the contradictions that arise between the principles of sustainability at the global scale and the reality of urban development at the local scale. Some of these areas in Spain have considerable population figures. Torrevieja, for instance, went from a stable population of about 9,200 inhabitants in 1960 to more than 70,000 in 2001. With its seasonal population of summer vacationers, however, its population can be as high as 400,000 in August, the

most popular month among vacationers. Furthermore, the sheer intensity of urban development (over 90.000 dwellings, 75.000 of which are used exclusively as summer homes), and the related repercussions on employment and on increased demand for goods and services, make it a phenomenon that demands attention.

Local government policies in Torrevieja are quite contradictory. On the one hand, efforts are made in the field of environmental issues, such as in relation to the hydrological cycle and the management of areas of natural interest and in the organising of cultural projects. On the other hand, however, the rapid growth in housing and infrastructure encouraged by the existing model also permits investment in real estate property of decidedly poor quality. The dynamics of the local system is based almost exclusively on construction, which provides high returns on investment and also additional income that are welcomed by the community. This explains the level of support this kind of policy receives from local communities in general, and especially from those who are directly or indirectly involved in the process.

The new strategies now being employed try to promote more value-added projects like investments in quality hotels or a sound network of urban services. But the reality of the mass-production model, with its continuous construction of holiday homes, seriously limits such initiatives.

2. AIMS AND METHODOLOGY

In the current context of the restructuring of tourist destinations in the Mediterranean in a search for new ways of reinforcing competitiveness, the need arises to reconcile mass tourism with sustainable development. It is not unfounded to consider mass tourism destinations as the complete opposite of sustainability within the gradation elaborated

by Clarke (1997), but it also represents a simplification of the realities and processes that are much more complex. This paper assures the need to incorporate the principles of sustainable development within the planning and management of mature tourism destinations. The concept of sustainable development is taken to involve a process of qualitative change that can be assumed by any type of tourist destination, and it is not seen as an ideal state that rules out the possibility of convergence between mass tourism and sustainability.

The recognition of sustainable development as a process of qualitative change that can be adopted by any tourist destination turns sustainability into an operative, measurable paradigm. Within that process, the establishment of system of indicators is necessary for the analysis, assessment and monitoring of public and private policies. The proposal for indicators we make here implies redesigning pre-existing models. It is adapted to the specificities of tourist activity and focused on a local scale of work, the level at which problems and opportunities are best recognised in relation to the holistic dimension of sustainable development.

The system of indicators has been developed for the municipality of Torrevieja. Three basic vectors have been considered: pressures on the local environment, residents' and tourists' perceptions, and the policy responses (mainly those with a local scope). The design of the system of indicators used various information sources: statistics that were available on different fields (society and economy, the environment, tourism, etc.), in-depth interviews with local agents, and surveys of tourist demand during the summer season. Above all, the application of a Geographical Information System has made possible the georeferencing of primary and secondary data, as well as the analysis of various spatial processes.

3. TOURISM AND HOLIDAY HOMES: A RADICAL TRANSFORMATION OF THE LOCAL SCENE

Tourist services are nothing new to Torrevieja. Its reputation as a health resort for the surrounding communities dates back to the 19th century. Its income from tourism, however, was nothing more than a supplement to its population's main economic activity as a typical fishing village. Without doubt, the traditional relationships between the locals and their visitors have left their mark on the character of its people, who have learned to quickly assimilate the new and complex social structures resulting from the rapid transformation that the town has undergone in recent years.

Beginning in the seventies, but particularly during the eighties, there were massive arrivals of summer vacationers, mainly spaniards (above all from Madrid, Asturias and the Basque Country), attracted by the supply of economically-priced houses and apartments, which were then being promoted by large real estate companies. Over the years, real estate firms and a policy that encourages rapid urban growth, have brought about radical changes to the town's economic, social, cultural and ecological systems.

Figure 1 Number of new dwellings built in Torrevieja, 1991-2000 (*Source: Torrevieja Municipality*)

The urban structure of the Municipality of Torrevieja is divided into two clearly distinct types of areas. One is a large and densely populated town centre, which first began to spread along the shore-line and then, more recently, has begun to move inland. There

are more than 100 tourist and leisure settlements in Torrevieja that follow this peculiar urban development model in which thousands of holiday houses and flats are massed together within a relatively small area. In contrast to its densely populated urban zone, however, Torrevieja has a large natural area with two salt-water lagoons that has been declared a Nature Park and included in the Ramsar List of Wetlands of International Importance (The Ramsar Convention Bureau, 2002), in recognition of its great ecological value and its natural beauty. In summary, then, the Land Use-Tourism model described here is the result of two apparently opposed realities: a) the great natural reserve, which is commercially exploited in only one small area, where there is a salt factory, and b) the other side of the system, the congested urban centre with its growing suburban sprawl (Figure 2).

Figure 2 Land Uses in Torrevieja

4.- INDICATORS FOR THE ANALYSIS AND MANAGEMENT OF SUSTAINABLE TOURISM

Sustainable tourism has become a key issue for tourism policies and management and is becoming increasingly important because of its widespread social acceptance. In spite of the prolific use of the term “sustainable tourism” and the numerous scientific definitions proposed for it, the ambiguity inherent in the concept and its rhetorical and often inappropriate use have not yet been overcome (Ivars, 2001). After wide acceptance of the initial definition in the Brundtland report and following the tremendous impact of the Earth Summit in Rio de Janeiro (1992), there have been many

different points of view expressed in numerous subsequent Conferences, Documents and International Declarations on the topic. These have served to enlarge upon and clarify the theoretical principles of sustainability in tourism. Some outstanding examples of relevant declarations are the Charter for Sustainable Tourism, Lanzarote (1995), Agenda 21 for the Travel and Tourism Industry (World Tourism Organization et al., 1995), and the Worldwide Code of Ethics in Tourism (Santiago de Chile, 1999).

Such initiatives, together with the growing debates about sustainable tourism, highlight the essence of the sustainability paradigm as the balance between economic growth, environmental preservation and social justice (OMT, 1993; Butler, 1993; Coccossis, 1996; Bramwell et al., 1996; Hall, 2000). The key challenge facing the management of tourism is the attainment of this balance. With such an objective in mind the sustainable development of tourism is identified here as *“a process of quality change resulting from political initiatives that include the indispensable participation of the local population and that adapts the institutional and legal framework, and the planning and management tools, in order to achieve development based on a balance between the conservation of existing natural and cultural resources, the economic viability of tourism and social equity in tourism development* (Vera and Ivars, 2001).

This definition seeks to avoid the identification of sustainable tourism as an ideal or utopian state, which could give rise to logical arguments that exclude the possibility of applying its principles to such major “sun and sea” destinations as Torrevieja. While there are considerable difficulties in such destinations in applying sustainability principles, there is a need for immediate action due to the great pressures on the environment and due to the socio-economic structure being highly dependent on the well-balanced evolution of tourist activities.

The three basic dimensions of sustainable development (preservation of natural and

cultural resources, economic viability and social justice) can be measured and analysed using indicators that are adapted to specific realities of each place and that consider environmental, socio-economic and tourist variables. The identification, monitoring and control of such indicators will assist greatly in working towards more sustainable tourism and in promoting this objective in public and private sector decision-making.

4.1.- The conceptual framework for a system of indicators

The limitations of traditional development indicators, such as Gross Domestic Product and Gross National Product, have been criticised since the 1970s (OECD, 1978). However, there have been relatively few achievements in terms of defining and applying indicators with a social or environmental content. The huge impact of the Rio Summit and the call in Agenda 21 (chapter 40.6) for the use of sustainability indicators has prompted much theoretical work in the field. There is a long list of international and national organisations as well as non-governmental organisations, that have undertaken initiatives related to sustainability indicators: the Organisation for Economic Cooperation and Development (OECD), the United Nations Organisation (Environment and Development Programmes and the Commission for Sustainable Development), the World Bank, the European Union's General Directorate XI, the European Environmental Agency, The International Council for Local Environmental Initiatives, the World Watch Institute, the International Institute of Sustainable Development (Canada), the World Tourism Organisation, the World Wide Fund, etc.

The application of sustainability indicators to tourism arises from the need to introduce environmental considerations in sectorial policies, this being underlined in the European Commission's Programme V on Politics and Action in Environmental Matters (COM

(92) 23 final, 1992). The environmental perspective prevails in this approach, and its influence is clearly felt on the genesis of national sustainability indicators in countries such as France, Spain or the United Kingdom. Nevertheless, in the planning and management of destinations on a local scale, this perspective is widened to embrace a more comprehensive view that includes the economic and socio-cultural dimensions of sustainable development.

Among the earliest studies to deal with tourism planning on the basis of sustainability and the use of indicators is the ECOMOST project, which was promoted by the International Federation of Tour Operators (IFTO) and part-funded by the European Union. This project's aim was to create a model for sustainable development based on an analysis of tourism development on the islands of Mallorca and Rhodes. The system of indicators was used for analysis, in order to identify the critical problems in the destination, and to develop proposals concerning the actions required to reach higher levels of sustainability (Hughes, 1994).

The World Tourism Organization's proposals for the sustainable planning of tourism also led to calls for the use of indicators (WTO, 1995). The definition of such indicators has become an aim shared by a large number of organisations. In France, the *Institut Français de l'Environnement* (IFEN, 2000) and the *Agence Française d'Ingénierie Touristique* (AFIT) have undertaken interesting work. The *IFEN* has identified a series of indicators at a national scale that are classified by types of destination (coastal, mountain, rural or urban) and that seek to facilitate the integration of the environment in tourism policies. And the *AFIT* has outlined a set of criteria for sustainable tourism management in tourist destinations that has been tested in several pilot areas (Céron & Dubois, 2000).

In Spain, the Ministry for the Environment has been working to define a system of

environmental indicators for the tourism sector as part of the Spanish System of Environmental Indicators, although Autonomous Communities like the Balearic Islands have already developed their own regional system of indicators (Blázquez *et al.*, 2001). In the local context, the implementation of *Agenda 21* in mature coastal resorts such as Calvià (Mallorca) or Sitges (Barcelona) has given a boost to work on tourist sustainability indicators. In the United Kingdom, the design of indicators for sustainable development proposed by the Department of the Environment, Transport and the Regions (DETR) has highlighted the need to develop specific indicators for tourism activity (DETR, 1999). The DETR emphasize the importance of destination indicators which are representative of local conditions and can potentially be aggregated to feed into a national system, with the British Resorts Association collaborating on defining this latter system (Allin *et al.*, 2001).

The system of indicators presented in this paper reflects contributions already made by the OECD's *pressure-state-response* (PSR) model (1978, 1993), and by the European Environmental Agency's *driving forces-pressure-state-impact-response* model (DPSIR) (EEA,1998), conceived for urban environments, with those models adapted for responsible management of tourist areas. The system of indicators is shown in Figure 3. It is based on models of causal organization which measure both the impacts of human activity on local environments and the political and social responses to prevent or mitigate them. It also incorporates the holistic perspective of sustainability by considering the environmental, economic and socio-cultural dimensions of tourism development.

Figure 3 A system of indicators for the Planning and Management of Tourist Areas
(Source: Adapted from OECD (1993) and EEA (1998))

The indicators are organized in four inter-related groups: Land-Use - Tourism model, pressure indicators, state-quality indicators, and political and social response indicators. The Land-Use - Tourism model is a prerequisite for identifying the different types of tourist areas (coastal, urban, rural or mountain areas), understanding their different stages of development, and identifying factors that influence the evolution of tourism activities and can also orient it towards a sustainable rate of development. These factors are more easily recognised at the local level, where the principles of sustainability appear directly applicable (Vera et al., 1997). The pressure indicators reflect the tensions that tourism activities place on the natural environment and on the socio-economic structure of the destination, while the state-quality indicators express its current environmental situation, the quality of life as perceived by locals, and the degree of satisfaction experienced by tourists. The political and social response indicators represent the measures taken with regard to the conditions outlined in the Land-use - Tourism model, and the existing pressures as well as the state-quality of the different components of the development process. The placing of management measures at the end of the causal linkage certainly does not imply that the system exclusively promotes a policy of reaction. On the contrary, a periodic revision of these indicators provides useful information for both preventive and proactive measures.

4.2. Application of the system of indicators to Torrevieja

4.2.1. Indicators in the Land Use-Tourism Model

The group of indicators in the Land-use/Tourism model are adapted to analysing local conditions in order to measure any significant changes in these conditions. Such changes may come about as a result of various causes, such as the advent of a new competitive environment and subsequent impacts on demand, or the adoption of new strategies by the tourist destination. The sustainable planning and management of tourist spaces requires an appropriate definition of local indicators that are sensitive to changes, can easily be included in decision-making processes, and that merely supplements the existing local empirical knowledge of the destination and does not substitute it.

The Land-Use – Tourism model used in Torrevieja is based on the ideal characteristics of a place for the development of “sun and sea” tourism: a coast-line of attractive sandy beaches and a high climatic comfort index. These traditional elements provide the basis for the form of tourism that has developed in Torrevieja. In an effort to encourage higher quality forms of tourism and to avoid the homogenisation experienced in other tourist destinations along the Mediterranean (Morgan, 1994), other resources that have a proven potential for tourism have also been included. The types of tourism associated with these resources should not be seen merely as a complement to the traditional tourist supply, as these resources can promote the development of new tourist products and services. This applies to nature or health tourism, which is now offered at the lagoons in Torrevieja’s Natural Park. The surface area of the lagoons is almost 40% of the municipal area. The products available at the lagoons are complemented by three golf courses and other new projects sponsored by the City Council, such as the remodelling of the port with a new commercial and entertainment centre, the tourist-oriented use of such cultural and historical traditions as seafaring and salt-making, and the creation of two ecologically-oriented paths along the coast.

As a result of these resources, land is now being developed throughout the municipality, with the exception of the lagoons themselves, but with notable pressure being exerted on the coastline where urban development interests seem to prevail. Table I shows that the residential area is highly concentrated, and an inevitable consequence of this residential-vacational urban development is the transformation of traditional structures like agriculture. This transformation causes the expansion of public services (water-supply, sewerage and waste treatment, civilian protection, etc.) and creates demand for larger and more efficient infrastructure (new roads, street lighting, etc.), all of which lead to ever-increasing maintenance costs.

The rapid growth of real estate activities, whose rhythm and intensity are subject to the economic cycles of demand for housing rather than any policy dictated by local politicians, has increased the importance of the construction sector within the local economic structure. The local economy is already highly specialised in the service sector to fulfilling the needs of the growing number of permanent residents and the overwhelming volume of seasonal visitors. The growth in real estate activity and the tertiary sector have been accompanied by a remarkable migration from other provinces in Spain as well as a noticeable presence of foreigners, thus transforming the demographic structure of the municipality. Among the newcomers, a clear distinction should be made between holiday-makers, retired Spanish and foreign couples, and those who have arrived as workers in the construction and service sectors. Most of these workers are of Spanish origin, although recently there has been an influx of foreign workers from developing countries. The arrival of national and foreign pensioners, however, is certainly causing a slow but progressive aging of the demographic pyramid. The low bedspace capacity of the regulated supply of tourist accommodation is a basic structural characteristic of Torrevieja's model of tourism. In contrast to this limited

supply of hotel accommodation and of registered tourist apartments and camping-sites, there is a huge volume of holiday homes and apartments, now estimated to be about 300,000 beds. With such a situation, the prevalence of real estate activities over tourist-oriented ones is evident. In other words, instead of the conventional supply of tourist products (package-tour holidays, etc.), what is on offer are houses and flats for sale or for rent. This explains the main type of demand that Torrevieja has today: visitors of mainly Spanish nationality, of low-middle income level, who organise their vacations without using the services of a travel agency, who are mainly in family groups, who tend to stay in their own homes, who use their own vehicle, whose average stay is of about 21 days, generally in summer, and whose yearly visit is the logical result of the inevitable bond that ownership of a home creates with the destination. The supply-demand interaction described here is quite common for most towns along the Spanish Mediterranean coast. What is truly singular about Torrevieja is the sheer magnitude of its real estate supply for tourism.

Table 1 Land-Use – Tourism model

INDICATOR	PARAMETERS
Tourist resources / Attractions	
Basic tourist resources	Average temperature of 18°C About 3,000 hours of sunshine per year 18 kms. of coastline 1,500 berths in 2 marinas Natural Park of Lagoons of La Mata and Torrevieja 3 golf courses within 8 kms. Events of tourist significance (International Folk Songs Contest, The May Fair, etc.).
Potential tourist resources	A better use of the Nature Park for a specific type of tourism. The urban and functional remodelling of the port. Health-oriented tourism in the lagoons (mud-baths, etc.). There is a project to build a hotel-spa resort within the perimeter of the park, although this is not free of controversy.
Land use	
Land for residential use	16,000,740 sq.mts., which represents 22.3% of the municipality, but reaches 33.5% if the surface area of the lagoons is subtracted.
Suburban sprawl versus concentrated areas for residential purposes.	The surface area of open residential land is twice the size of the concentrated area, representing about 15.3% of the municipality's total area.
Physical modifications of the coast	The costal fringe up to 500 meters from the sea-shore, is classified as either urbanised (74.7%) or urbanisable (9.9%).

Economic activity	
Economic specialization	66.7% of the companies belong to one of the following sectors: commerce, restaurants and lodging (51.45%) and construction (15.2%).
Employment by sector	The service sector employs the greatest number of workers (65%) according to the latest census (1991)
Official unemployment level	Unemployed persons among the resident population: 2.9% (2000) (La Caixa, 2001)
Demographic structure	
Increase in population	The official population has increased tremendously between 1970 and 2001 (622%), totalling 70,262 inhabitants, much higher than the average for the province which was around 53% for the same period.
Origins of the resident population	With the recent influx of new residents, the origins of the population have changed considerably: 24.4% born in Torrevieja, 13.8% from the same province as Torrevieja (Alicante), 36.6% from other Spanish provinces and 24.2% foreign born (data from 1996).
The aging of the population	Those of 65 years or over represent 20.8% of the total population (1998), but the aging trend becomes obvious when we consider that in 1991 this age-group was only 15.8% of the total.
Tourist-oriented structure	
Regulated accommodation offer	5,504 beds in 2000, distributed among apartments (46.5%), hotels (26.8%) and camp sites (25.2%)
Potential tourist accommodation available in private homes	An estimated 300,000 beds in both second homes and apartments unofficially rented to visitors. Dwellings allocated exclusively to visitors represent 78.9% of total dwellings.
Profile of demand	Majority: vacationing families, middle-income level, Spanish nationals, owners or renters of holiday homes, visits in summer, and highly loyal to the destination.

Source: METASIG Project (Vera, 2002)

4.2.2. Pressure Indicators

The great volume of recently-constructed dwellings due to the speed of development, explains the great extension of the built-up area, which has not only changed the landscape of the municipality but has also encroached considerably on what was previously agricultural land before the tourist boom. Furthermore, the resident-visitor function of the available land has a great impact on the consumption of water and electricity and the collection of wastes. These are several dimensions to the pressures on the destination, but two aspects should be highlighted: (a) the rapid increase in new dwellings, which is the greatest pressure of all, and (b) the extreme seasonality of tourism, which conditions the real impact on the destination. Figure 4 shows the steady increase in the number of homes during the period 1996-2000, which has caused an

increase, though not proportional, in the consumption of water and garbage collection. The increase in the enumerated population is a direct effect of the City Council's rapid expansion policy and the efforts it has made to register as many residents as possible. The registered supply of accommodation shows a modest growth, although there are projects underway that could help to increase it by 70%. An increase in hotel accommodation, in contrast to real state services, is essential for developing new tourist products (health-spas, congresses, aquatic sports, golf, nature, etc.), which, in turn, create new job profiles and help consolidate different types of business that are quite independent of the behaviour of the real estate sector.

Figure 4 Evolution of pressure factors 1996-2000 (*Source: Vera, 2002*)

The true seasonality of Torrevieja's tourist visits is difficult to measure as there are no available data on private accommodation, which, in fact, is greater than the official hotel supply. This is why indirect indicators should be used, in spite of their obvious limitations. Both the monthly consumption of water and the monthly volume of garbage collected have their seasonal peaks in summer. On the other hand, and parallel to the growth in the registered population, an increase is also seen in the number of out-of-season visitors, as Figure 5 suggests. It is also noteworthy that the average monthly increase in garbage collected during the period 1997-2001 is not highest for the two most popular months for vacationers (July and August).

Figure 5 Urban waste collection. Monthly distribution in 2001 and average monthly increase, 1997-2001 (Source: Torrevieja Municipality)

Table 2: Pressure indicators

INDICATOR	PARAMETERS
Human pressure	The population of the municipality during the peak period (August) can be as high as 375,000 people, with a density of about 5,252 inhab/sq.km.
Seasonal human pressure	With the use of an indirect indicator, urban garbage collection, the seasonal summer peak is clearly seen, with the months of July, August and September having the highest rates (36.7%) of annual garbage collection. Water consumption confirms the summer pressure, as the month with the highest consumption rate (August) is triple that of the lowest (January).
Increase in land use for residential purposes	Although the surface area of the concentrated residential zone remains stable, the open space dedicated to residential construction grew 10% during the period from April 2001 to January 2002.
Increase in number of dwellings	The average annual increase in the number of dwellings for the period 1996-2000 is 16.6%.
Increase in official supply of tourist accommodation	The average annual increase in the official supply of accommodation during the period is 13.8% (1996-2000), although it is based on a modest initial volume, and most of the increase took place during the year 2000.
Increase in urban garbage collection	The average annual increase in urban garbage collection for the period 1996-2000 is 2.4%
Increase in water consumption	The average annual increase in water consumption during the period 1996-2000 was 4.9%, almost twice the increase in garbage collection.
Increase in consumption of electricity	The average increase in domestic consumption of electricity in the service sector was 6.3% for the period 1990-1995, according to the latest available data

Source: METASIG Project (Vera, 2002)

4.2.3.- State-Quality Indicators

This set of indicators relates to the state of some easily measured features, like the quality of sea-water and the atmosphere, as well as more subjective aspects such as local residents' and tourists' perception of the quality of life. In relation to the most relevant indicators of atmospheric quality, it is suggested that the atmosphere is not negatively affected by the seasonal concentration of tourists although no official measurements are made to confirm this. On the other hand, noise pollution has been observed in the most congested urban areas, due principally to traffic and nightclubs

and discos. The quality of the city's running water meets the official health requirements and, in spite of a total dependence on water supplies from outside, no problems of either quality or supply have arisen so far, in contrast to the situation in many other coastal resorts along the Mediterranean. The sea water is kept at relatively high levels of quality, as attested by the award of six blue flags to the municipality during 2000. This indicator is directly related to policies for the treatment and purification of waste water, and a project is now underway to increase the capacity of the water purifying plant.

A survey on the perceived quality of life was carried out through a series of interviews with representatives of the social and political scenes (political parties, business and cultural associations, etc.) The interviewees highlighted the great economic dynamism of Torrevieja and its surrounding areas and the positive effects this has on employment. However, this dynamism which is directly related to real estate and tourist activities and to the increase in population, has negative effects on certain aspects of local life, such as the health services, which is the main concern, and traffic (congestion and parking problems), along with a growing concern for street safety and the loss of local identity. In spite of these concerns, the suggestions made by the interviewees for improving the situation did not include limits being put on either urban growth or tourism. Indeed, both of these are regarded as the key elements in the municipality's development and prosperity which could not have been accomplished by any other sector, and they are therefore accepted as necessary and unavoidable. Consequently, in their opinion the most urgent actions to be taken are all in the realm of public investment (a new hospital, car parks, better roads, etc.)

In order to evaluate the level of satisfaction among tourists a survey was carried out with 240 interviewees in the Municipality of Torrevieja during the summer of 2001.

The sample characteristics sought were basic and simple, considering age, sex and nationality. The questionnaire was divided into two related parts and the responses were based on a 5-point Likert-type scoring system. In accordance with the multi-attribute model of attitude measurement presented in Fishbein (Ryan, 1995), the first part of the questionnaire inquired about the aspects that a tourist generally considers most important when deciding on a destination for their holiday. The second part evaluated the extent to which Torrevieja fulfilled these attributes. In this way, the information gathered was better than would be obtained from a single indicator of overall satisfaction, which would be extremely difficult to relate to the varied influences on their satisfaction or dissatisfaction. Although the overall evaluation of the destination was quite satisfactory (74%), there are two distinct sets of attributes with different *importance/adequacy* relationships. These were certain features that the tourists considered as very important that they felt highly satisfied with. This was the case for the municipality's main tourist resources, that is the "sun and sea" elements, as well as for the private sector's service provision (commerce, restaurants, lodging, entertainment, price-quality ratio, etc.). Other services like street cleaning and public safety scored well with visitors, but less well for residents. Paradoxically, the great transformation of the landscape by the built-up area does not seem to have negatively affect the tourists' perceptions of the destination, perhaps influenced by the attractiveness of the coastline and the large Lagoons Nature Park.

On the negative side, however, there were other aspects that tourists considered important that they were not satisfied with. These seem to have been the direct result of the rapid growth in the population and urban development and its flawed planning. The high concentration of tourists in the summer is the prime cause of traffic-jams, difficulty in parking, pedestrian congestion, noise, lack of green areas and insufficient health

services. This evaluation of the demand side shows that there are clear weaknesses in the Land-Use-Tourism model and that public policies with a new strategic vision are required so as to avoid the problems detected.

Table 3: State-Quality Indicators

INDICATOR	PARAMETERS	
Basic environmental measures	According to conventional standards, there is no atmospheric pollution. Certain areas suffer from noise pollution. Both sea-water and tap-water are of good quality.	
Perceived quality of life	The interviews carried out among the social actors show a positive evaluation of the business sector and the creation of jobs. The areas that need attention are health services, traffic and parking. Other concerns to be addressed are public safety and the loss of local identity.	
Tourist satisfaction	Important and satisfactory: Climate Quality of lodging Commercial supply Amusement and entertainment Quality of restaurants and bars Cleaning of public spaces Quality-price ratio Sports facilities Attractiveness of the landscape Public safety Quality of the beaches	Important but unsatisfactory: Quality of urban development and construction Parks and natural areas Historic and cultural attractiveness The pedestrian flow Health services Noise levels Tranquility and non-massification Traffic Parking

Source: METASIG Project (Vera, 2002)

4.2.4. Response Indicators

The political response to the factors outlined above does not show any modification to the present policy of rapid urban, tourism and demographic growth, rather it seeks to channel this development in a coordinated way and thus to balance the residential-tourist function with the quality of life through more public spending. Because of tax revenues resulting from its rapid growth, Torrevieja now has the third largest local government budget in the province of Alicante. The environmental and socio-cultural losses seem to be accepted politically and socially as inevitable costs, with the opportunities for them to be mitigated through greater investment in certain areas. This undeclared strategy seems to be comparable to the concept of weak sustainability

(Hunter, 1997; Pearce and Atkinson, 1998), according to which lost natural capital can be substituted by investment in diverse environmental projects. As such, there is appreciation of the protection of 40.5% of the surface area of the municipality, the progressive increase in the “green” budget, the treatment of waste water, the selective collection of waste, and the surveillance and control of the environment. Such policies contrast greatly with the common link between coastal mass tourism and the progressive and uncontrollable degradation of the environment, and they offer more substance to debates about the mature tourist destinations along the Mediterranean coast.

Contrary to what would be expected of a tourist-oriented municipality of its size, Torrevieja’s local policies are not based on sound planning. Its Land-Use Plan is obsolete and the opportunities derived from its inclusion in the “Plans for Excellence in Tourism” and “The Green Municipality”¹ programmes have not been channelled into any concrete plans for public action, but rather have led to ad hoc projects and specific programmes for the renovation and enhancement of the municipality, such as the remodelling of the port, the creation of two ecological paths along the coast, or the recovery of its cultural heritage. This demonstrates a gradual change from tourism based on exotropism (the attractiveness of the environment, like the sea or the beaches) to one of endotropism (the gradual tourism-oriented use of revalued local elements), in accordance with the concepts coined by Dewailly (1990).

TABLE IV: RESPONSE INDICATORS

INDICATOR	PARAMETERS
Actions on tourism resources	Urban remodelling and the creation of new commercial and leisure centres. This project includes the recovery of facilities that were traditionally used for the storage and transport of salt. The “Integral Plan” for the coast of Torrevieja .
Urban planning	The regulation in the “General Urban Plan” was approved in 1986. The long period that has passed since its introduction, the frequent ad hoc modifications, and the overwhelming real estate activity all indicate the need to revise the municipality’s urban plan.

Protected non-urbanizable land	2,906 hectares of natural landscape is under protection (40.5% of the municipality's surface area), most of which is included in the Nature Park which is governed by a Management and Use Plan, approved in 1994.
Tourism planning	Plan of Excellence in Tourism (2000) and the declaration of Torrevieja as a pilot destination for the "Green Municipality" programme.
Municipal budget	Torrevieja's budget, previously in eighth place in the province of Alicante, has now become the third largest budget in the province with a spectacular increase of 354.7% between 1990 and 2000.
Green budget	In spite of the difficulties in separating out the parts of the budget with environmental purposes (changes from year to year, expenses and investments coming from other Administrations, etc), it is estimated that this reaches around 20% of the total. Among the main items in this percentage are the collection, elimination and treatment of garbage and street cleaning (64% of the green budget), parks and gardens (23%), and beaches and pools (7.6%).
Waste water treatment	The purifying station for waste water treated 6,419,231 cu.mts of water (2001) by means of a system of activated mires. The effluent was used by the City Council for the watering of public gardens, street cleaning and agricultural irrigation. Juárez (2001) estimates that 61% of the recycled water is now used, with a great reduction of loss in the distribution network over the last couple of years.
Selective garbage collection	The selective collection of residues has now reached a total volume of 6,780,480 kilograms per annum (2001), which represents 12% of the total waste generated in the municipality, with a mean increase of 1.4% over 2000. The main residues that are selectively collected are organic remains, most of it from the pruning of trees (37.7%), paper-cardboard (19.2%) and glass (11.8%).
Environmental surveillance and control	The municipality has an Environmental Ordinance and an Environmental Surveillance Brigade.

Source: METASIG Project (Vera, 2002)

5. AN ASSESSMENT OF LOCAL GOVERNMENT POLICIES

Analysis at the local is important to understand the integration of sustainability in the development and management of tourism. In decentralised Spain, each Autonomous Community develops its own tourist, urban and ecological policies. Furthermore, at local government level there are several different bodies with authority to implement local projects. Indeed, it can be said that the existing national tourism policy is merely a recognition of the diverse strategies that were spontaneously adopted by the different Municipalities from the very start of Spain's tourism development. There is no other way of explaining the great disparity between neighbouring tourist resorts that share the same natural resources and have developed totally different systems for tourism

management, in both their structures and activities. Any attempt to apply the principles of sustainability to tourism, therefore, must consider the diversity of the strategies developed at the local level, a practice that has been widespread in Spain for more than three decades.

In the case of Torrevieja, the Municipality's approach can be classified in several ways, even though the cornerstone of tourism development over the last twenty years has been the promotion of housing construction, devoted almost exclusively to vacationers. It is a low-cost product that is promoted and sold by large real estate companies whose extensive commercial networks are the key to their success in national and international markets. In view of the considerable urban saturation, and in order to avoid the image of a lower-quality mass tourism resort, Torrevieja has for the last five years been implementing an environmental protection policy that involves recovering degraded zones and projecting a new image of itself associated with the Municipality's star product, the Nature Park.

5.1.- Development policy

The current Land Use Plan was approved in the mid-eighties and it has become a useful tool for the mass construction of cheap housing. This locally conceived policy has eased the granting of licenses for new buildings, as the construction sector has now become an essential factor in the Municipality's economic, social and urban development strategies. Figure 1 showed that, except for brief periods of slight respite that coincide with reductions in real estate investment, there has been an overwhelming growth in the number of private homes and apartments for holiday use.

It was only from the 1990s that the notable lack of green areas, infrastructure and public amenities became manifest, leading to a recognition of the need to promote projects to address this shortage and to create new public areas and better urban services. Nevertheless, the model of rapid growth has not been modified or even questioned, so that the new projects appear to be emergency measures to address specific problems, although they are receiving good responses from the local population. It is not surprising, therefore, that the Plan for urban development, which was originally conceived as an eight-year development plan, has been operating more like an emergency plan for the last fifteen years. The most worrying aspect, however, is that the Plan's most important changes have been oriented towards achieving as much urban development as possible, by means of high-rise buildings or invading spaces that had once been declared unurbanisable.

In short, Torrevieja's urban policy is the result of a desire to continue the model of rapid growth in housing as an essential activity for the town's economy, with profits being made from land that was originally considered unproductive. Indeed, this *modus operandi* is quite common among most other tourist resorts along Spain's Mediterranean coast (López Palomeque and Vera, 2001). In the case of Torrevieja, world-famous firms are commissioned for large urban projects as a way of creating an image of renewed vitality for their already over-congested areas.

5.2. Tourist promotion policy

After many years of rapid growth and a development plan that favoured real estate activity, certain aspects seem to be changing, although the real estate activity has not slowed down. The new paradigm is a simple change in image, in a desperate attempt to

neutralise the impression of congestion. This translates into more limited tourist promotion, with Torrevieja no longer participating in the International Tourism Fair (FITUR) held annually in Madrid, and promotion of more select forms of tourism supply, with a particular emphasis on investment in quality hotels to off-set the existing model of private accommodation. The Nature Park is being promoted as the new image of the town, which contrasts sharply with the reality of the existing congestion. In collaboration with both the central and the autonomous governments, a new plan for “quality tourism” is being implemented (the Excellence Plan). Torrevieja has also been selected as pilot area for the implementation of the government project, “the Green Municipality”. The question that remains to be unanswered, however, is how to achieve a balance between these two different and opposed realities: the conservation of natural spaces and the continued urban development.

5.3. Cultural Policy

The benefits obtained from the urban development process and the need to create an image of renewal for this maturing tourist destination have influenced the City Council’s cultural policies. The development of a major cultural programme and the staging of significant events that project the image of the Municipality, like the granting of a literary prize (one of the most important prizes in Spain), have led to Torrevieja appearing in the cultural pages of national newspapers for a few days every year. It is a conscious attempt to overcome the the Municipality’s previous image as a destination of cheap real estate promotions that served as prizes for several television shows. Several doubts emerge, however, when a cultural policy is dependent on the building sector and on a constant increase in visitor numbers.

5.4. Environmental policy

The environmental policy was created in an effort to off-set the image that the process of constant urbanization has given the Municipality. The considerable progress made in certain areas like the hydrological cycle and waste management is relatively unusual among the tourist resorts on Spain's Mediterranean coast. The promotion of the Nature Park and of environmental values is another key element of Torrevieja's new tourism programme, but the granting of licenses for buildings at the very borders of the Park certainly seems to be in contradiction with the idea of protecting the area. The major challenge, therefore, seems to be in finding a balance between the success in several aspects of environmental management and the maintenance of an undifferentiated "sun and sea" tourist supply.

5.5. Social policy

Whilst Torrevieja's present model of tourism promotion and urban development might be counterproductive for environmental protection, it has certainly been positive with regard to employment and *per capita* income. The great influx of newcomers (around 10,000 citizens from countries in the European Union and over 50,000 from the different provinces in Spain), has come either seeking the popular "sun and sea" holiday ambience or searching for work and business opportunities. Torrevieja's City Council actively promotes the official registration of all of its residents, since an increase in registered inhabitants results in more tax revenues and larger grants from Spain's central government and from the European Union. On the other hand, the City Council

has also had to increase the volume of social services it provides for the population, e.g. free public transport and subsidies for students and retired citizens with low-level pensions. The important question here, however, is how these social policies will be maintained when the urban development process that now fills the coffers of local government finally stops.

6. CONCLUSIONS

The definition of a system of indicators helps to show more precisely what sustainable tourist development means and aids in the interpretation of the evolution of tourist destinations according to sustainability principles. Such indicators can also easily be integrated with other approaches and instruments for the planning and management of sustainable tourism, such as the Strategic Environmental Assessments, town-planning, and environmental management systems for tourist destinations. However, to be more effective the sustainability indicators need a large amount of information as well as improvements in terms of their reliability, for example, a higher degree of scientific-technical elaboration can enhance their scientific consistency, their representativeness, their comparability, and finally, their political and social acceptance.

In this study, the system of indicators was applied to the municipality of Torrevieja. The results are valuable for analysis and diagnosis purposes as they provide a useful point of reference for decision-making in relation to resort management. The causal structure of the proposed indicators allows interactions in the local tourist system to be studied, as well as the degree to which there is integration of sustainable development principles in local policies.

In the municipality under study a model based on real estate and tourism development

continues to prevail. This trend is evident in the increased number of tourist dwellings and the growth of the population registered for the census. Periods of lower growth in building activity are linked with external cycles of recession and do not reflect a will on the part of local authorities to restrain growth. In fact the opposite applies, with local policies fostering demographic growth as well as the further development of real estate activity, which is profitable for both the building firms and the local administration. The municipal strategy is not exclusively based on the idea of a destination specialised in holiday homes. This strategy has evolved from the massive production of homes for tourist use towards the objective of becoming a service centre providing services for the wider urban system in the south of the Valencian Region. However, the persistence of the extensive building model and the predominance of holiday homes necessarily limits its urban function.

Growth takes place under guidelines such as the quality improvement of urban areas, the development of green spaces, encouragement to big projects like the remodelling of the waterfront, and improvements in environmental management (the hydrological cycle and residue treatment). These initiatives, among others, cannot be separated from the financial benefits that derive from economic dynamism and that materialise in local revenues. In this way, actions are undertaken to overcome negative perceptions of residents (health service shortages, traffic congestion or growing lack of safety) as well as dissatisfaction among tourists, this being particularly associated with summer overcrowding.

Despite the size of the tourism infrastructure and the annual tourist volumes, Torrevieja has not entered the spiral of environmental and tourist degradation that has often been attributed to mature destinations in the Mediterranean. Nevertheless, from the perspective of the interpretations of sustainable development (Hunter, 1997), the local

tourist system reflects a weak sustainability, that is, a type of economic growth is defended that permits the deterioration and consumption of certain natural resources, although there are some specific investments that reduce the negative impacts (such as the reuse of treated sewage water, the treatment of residues and the recovery of degraded areas as landscape). However, the Local Administration's investing capacity also depends on the maintenance of economic growth, which cannot last for ever. Once the current growth threshold has been reached, more conservationist policies should be applied in order to restore a balance between environmental and socio-cultural dimensions and the economic interests, with the latter so far having prevailed in the model for local development.

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Notes

1. The Plans for Excellence in Tourism are applied to mature destinations and are jointly organised by central, regional and local government. Their main objectives are the quest for sustainable development, the mitigating of seasonality, and an increase in the range of tourism products that these coastal destinations offer. The Green Municipality Programme, on the other hand, is sponsored by central government and is devoted to promoting the application of environmental management systems in tourist destinations.

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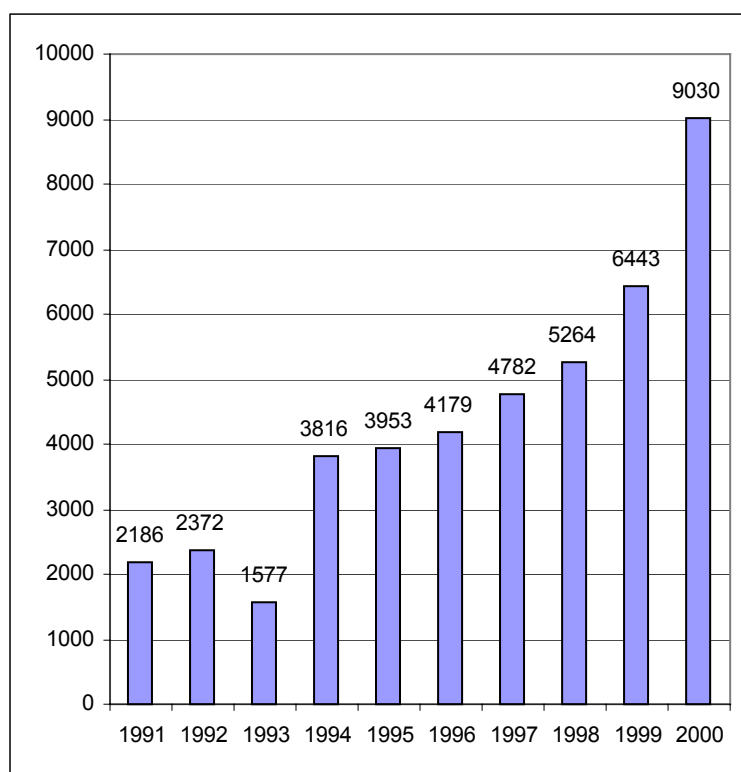


Figure 1 Number of new dwellings built in Torrevieja, 1991-2000 (*Source: Torrevieja Municipality*)

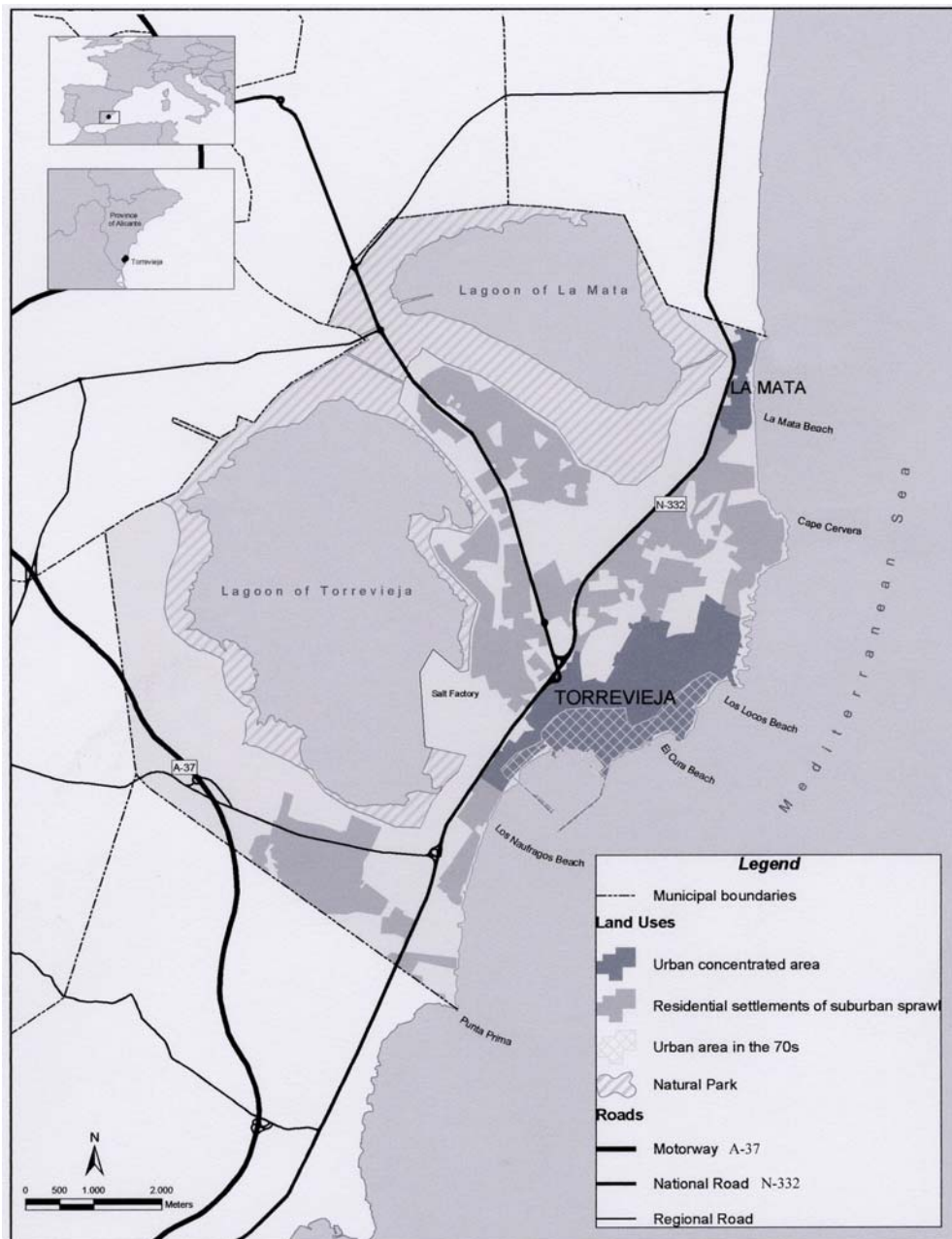


Figure 2 Land Uses in Torrevieja

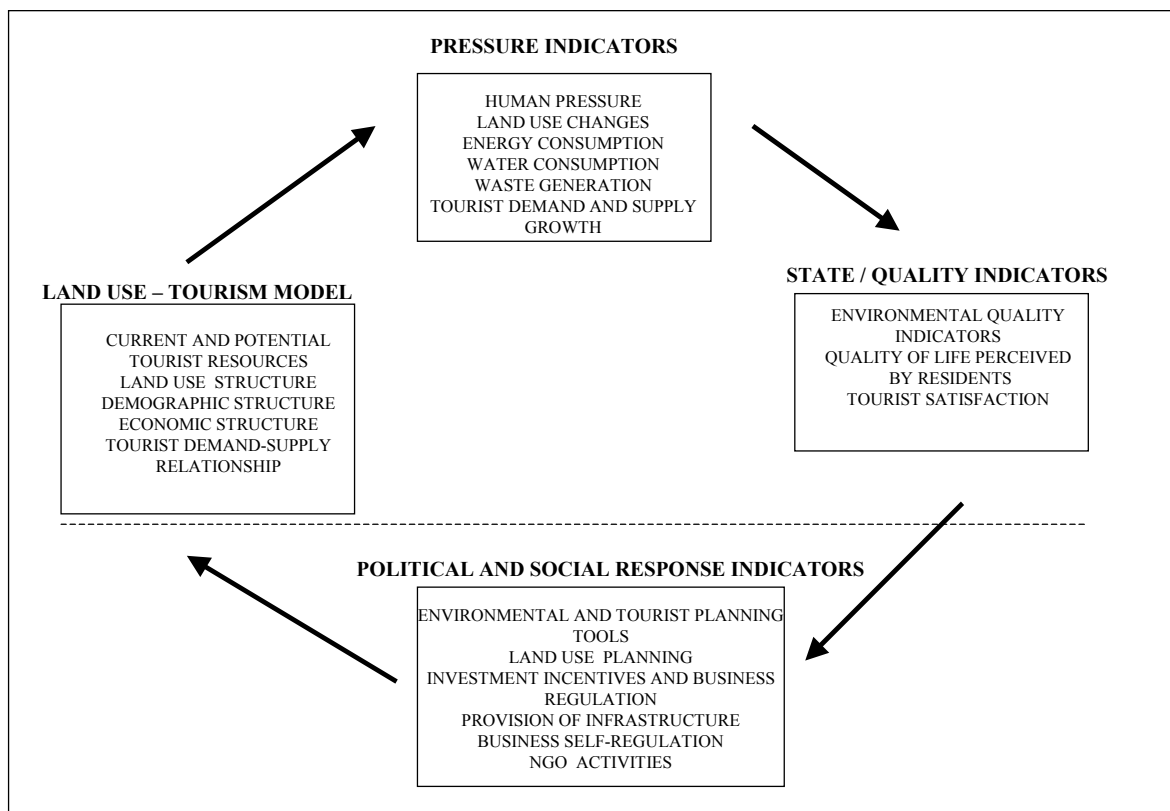


Figure 3 A system of indicators for the Planning and Management of Tourist Areas (*Source:* Adapted from OECD (1993) and EEA (1998))

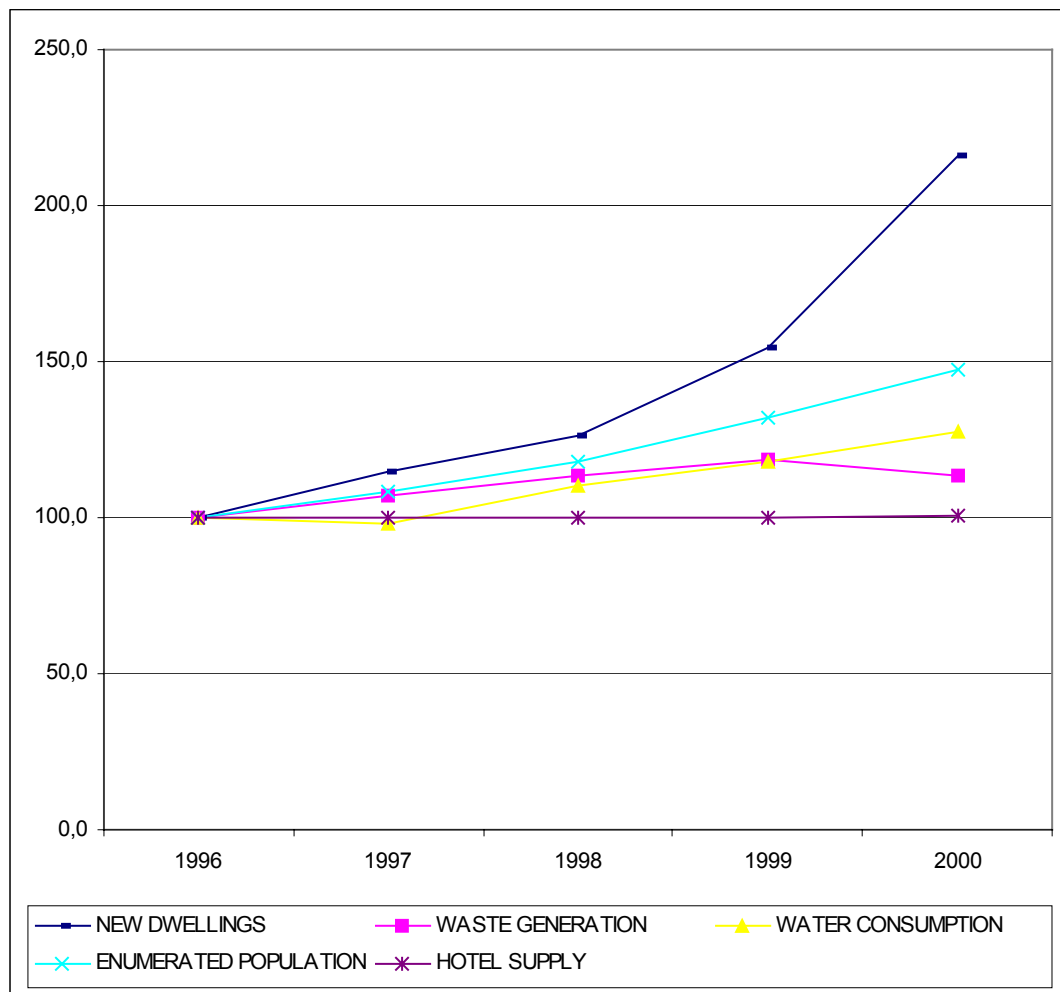


Figure 4 Evolution of pressure factors, 1996-2000 (*Source: Vera, 2002*)

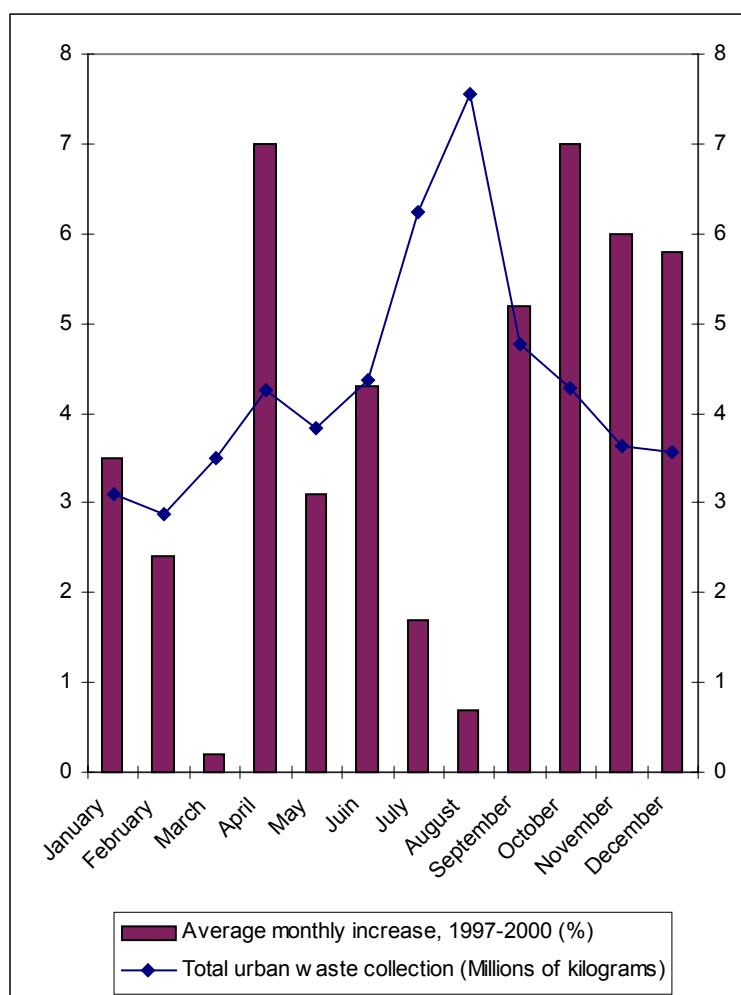


Figure 5 Urban waste collection: monthly distribution in 2001 and average monthly increase, 1997-2001 (Source: Torrevieja Municipality)